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Sutter et al.

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(54) **APPLICATION TOOL FOR COAXIAL CABLE COMPRESSION CONNECTORS**

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H01R 43/02 (2006.01)

(52) **U.S. Cl.** **29/751**; 29/753; 29/758; 29/760; 29/863

(58) **Field of Classification Search** 29/748–751, 29/753, 755, 828, 283; 72/409.19; 7/107, 7/158
See application file for complete search history.

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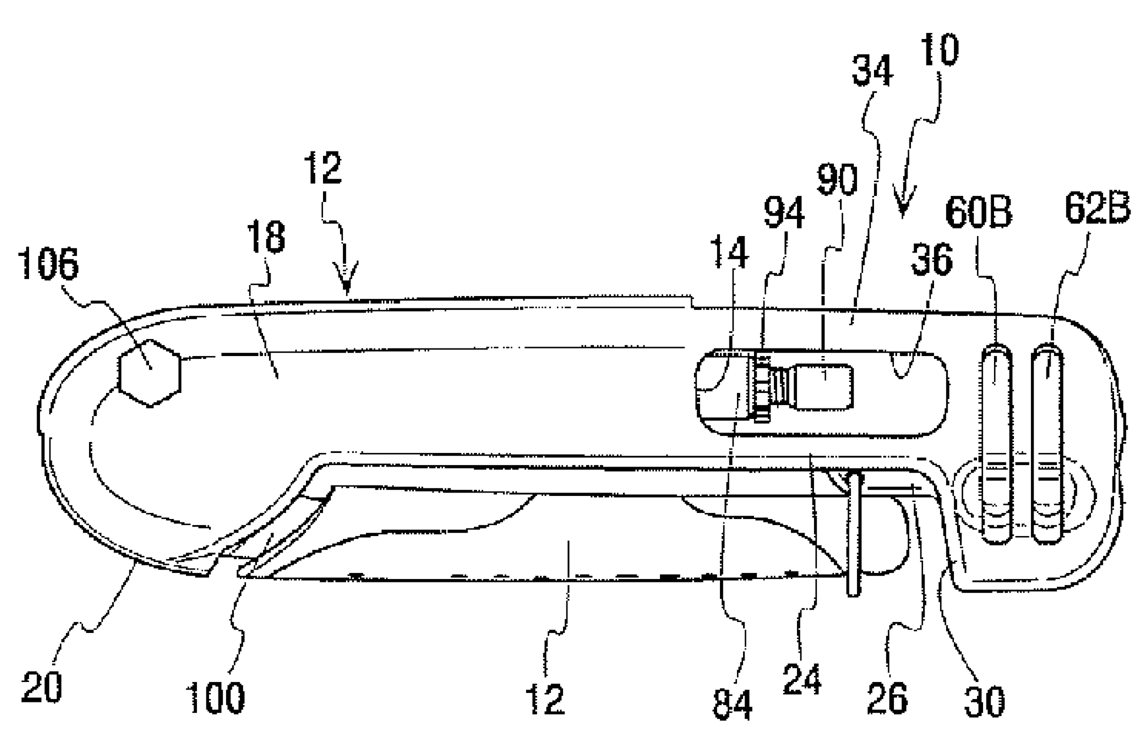
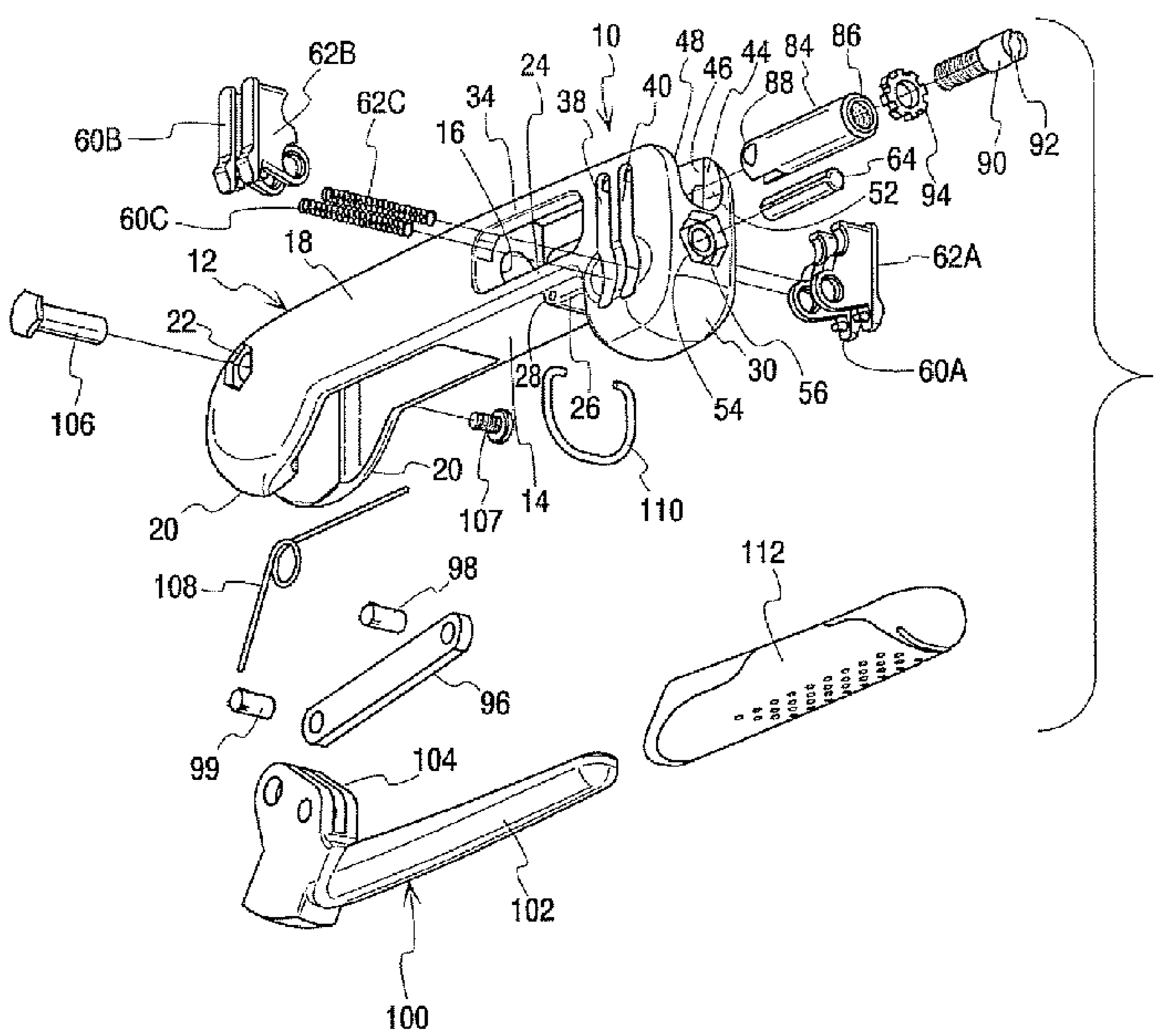
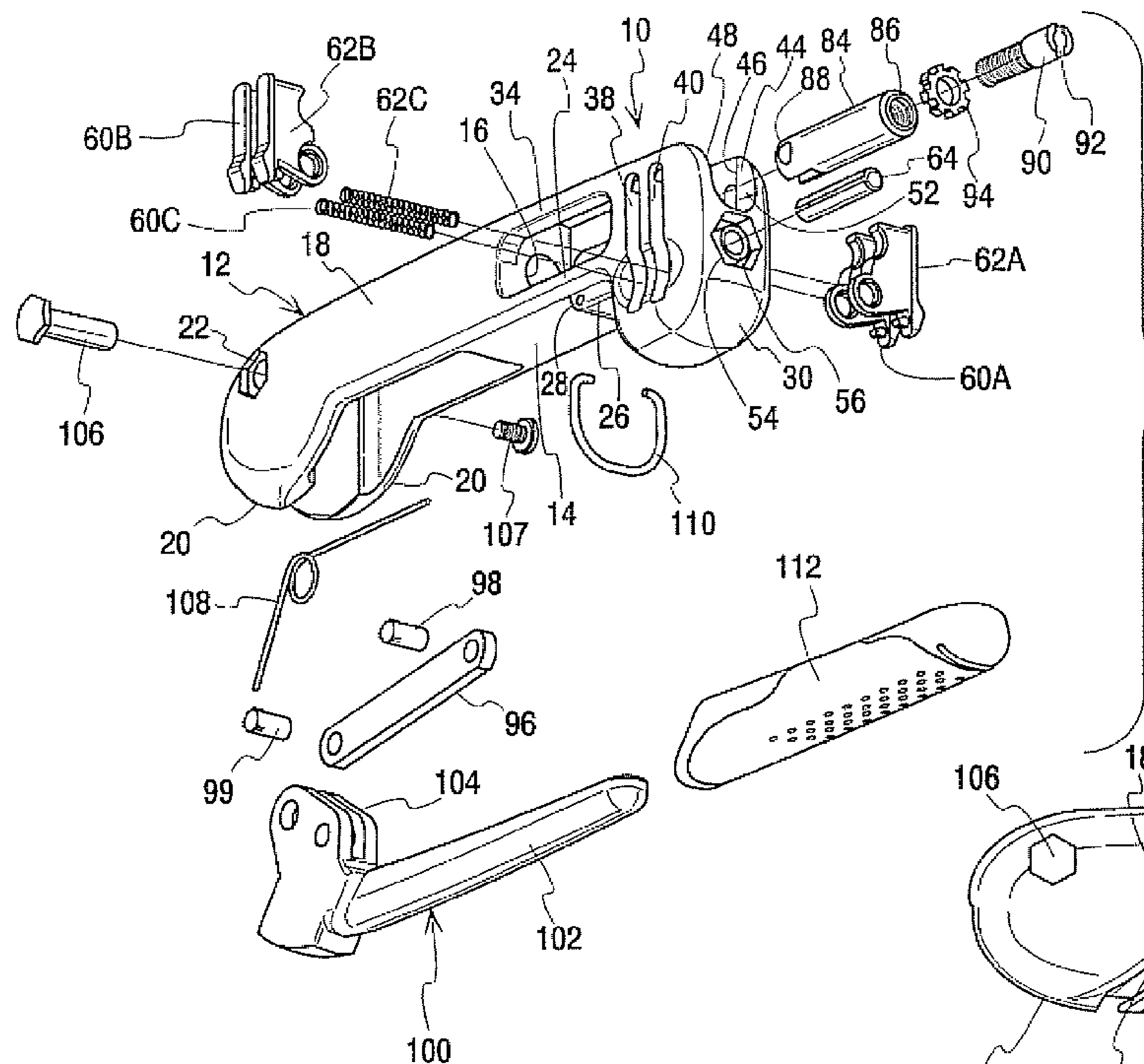
(57) **ABSTRACT**

A tool for installing compression connectors of various sizes and types on the end of a coaxial cable has a base mounting at least one movable anvil for engaging at least one length of connector. The base further incorporates a fixed anvil for engaging at least a second length of connector. The movable anvil defines an aperture or exit surfaces shaped to permit easy entry and exit of a cable while still applying a suitable retention force to an inserted cable. A slidably mounted plunger cooperates with the anvils to compress a connector.

23 Claims, 8 Drawing Sheets



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62C
60C
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18
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106
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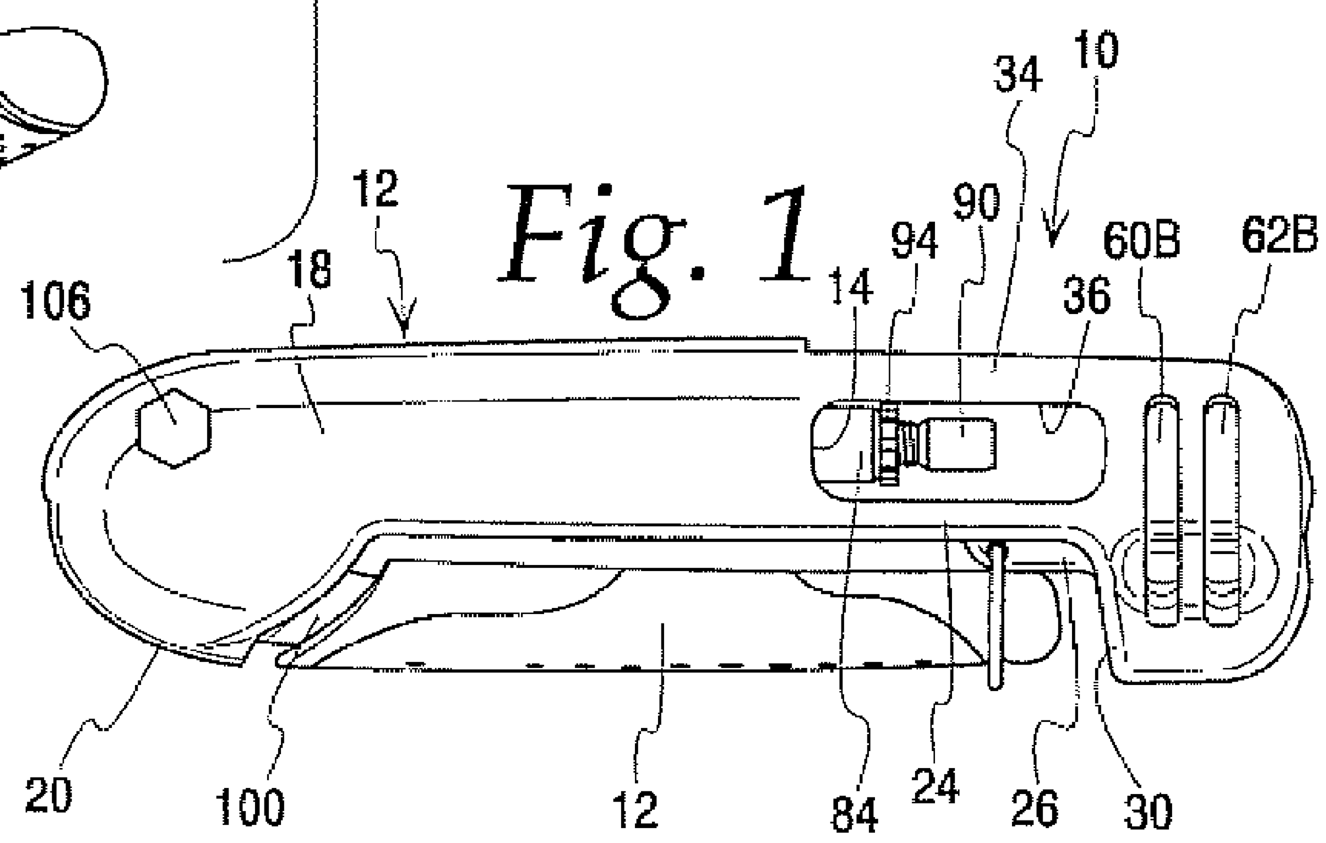
44
84
86
88
64
52
94
90
92
62A
60A
30
56
54
28
26
110
108
98
96
99
104
102
100
112

Fig. 2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18
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90
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10
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60B
62B
20
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12
84
24
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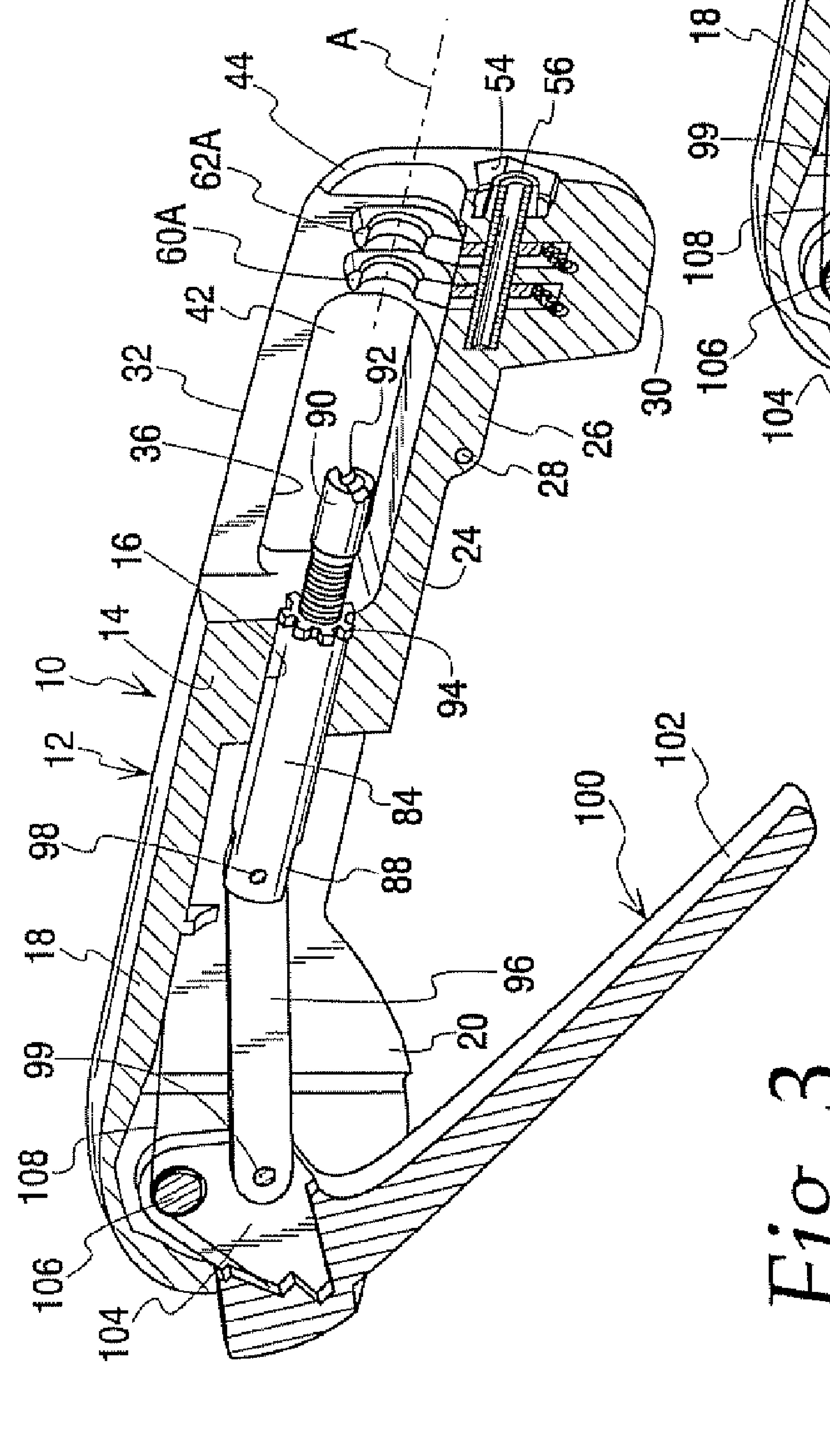
30

Fig. 1


A
44
62A
60A
42
32
36
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92
54
56
30
26
28
24
16
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10
12
94
84
98
88
18
96
20
99
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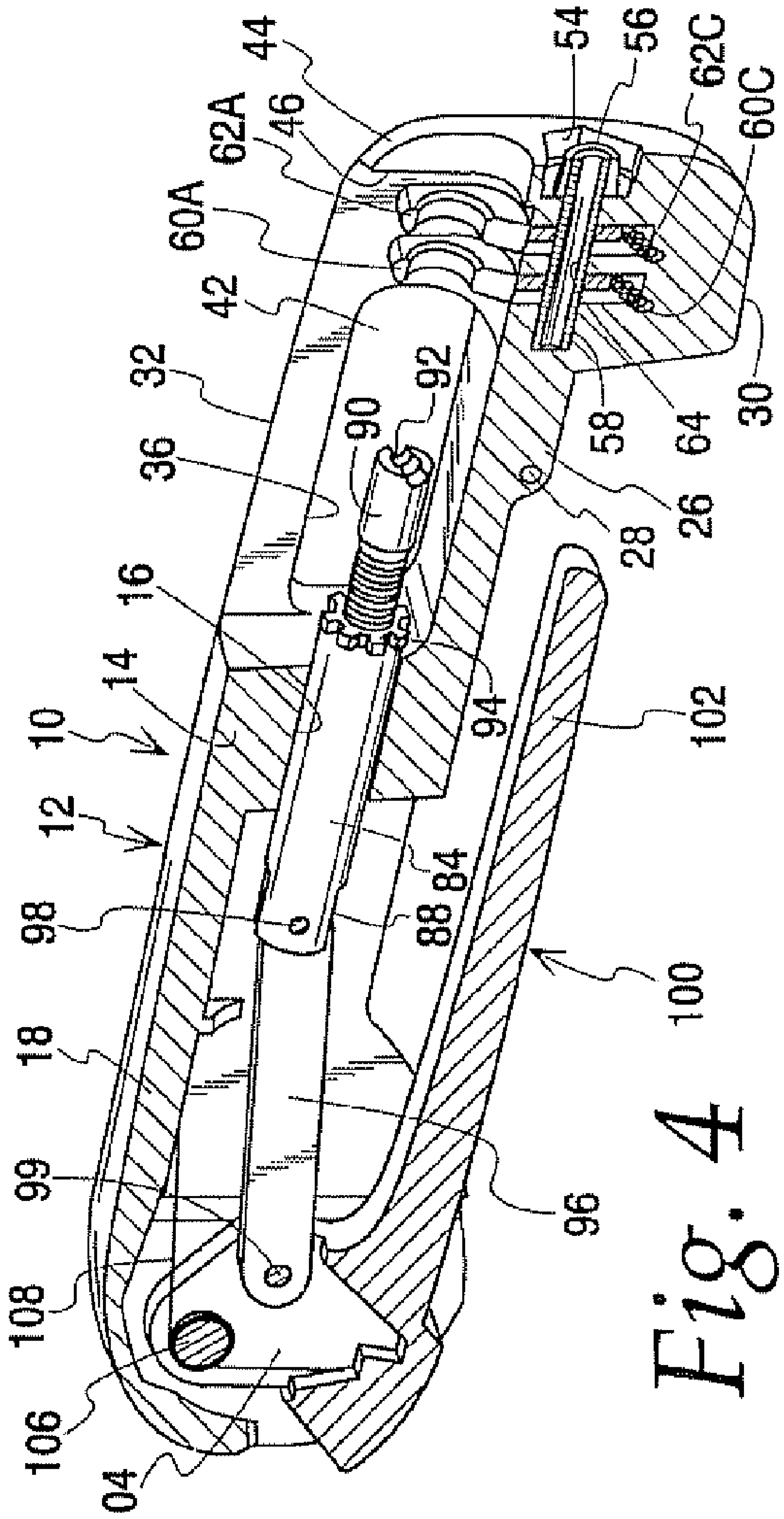
104
100
102

Fig. 3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54
56
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60C
46
62A
60A
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32
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92
58
64
30
26
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16
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10
12
94
102
98
84
88
100
18
99
96
108
106
104

Fig. 4

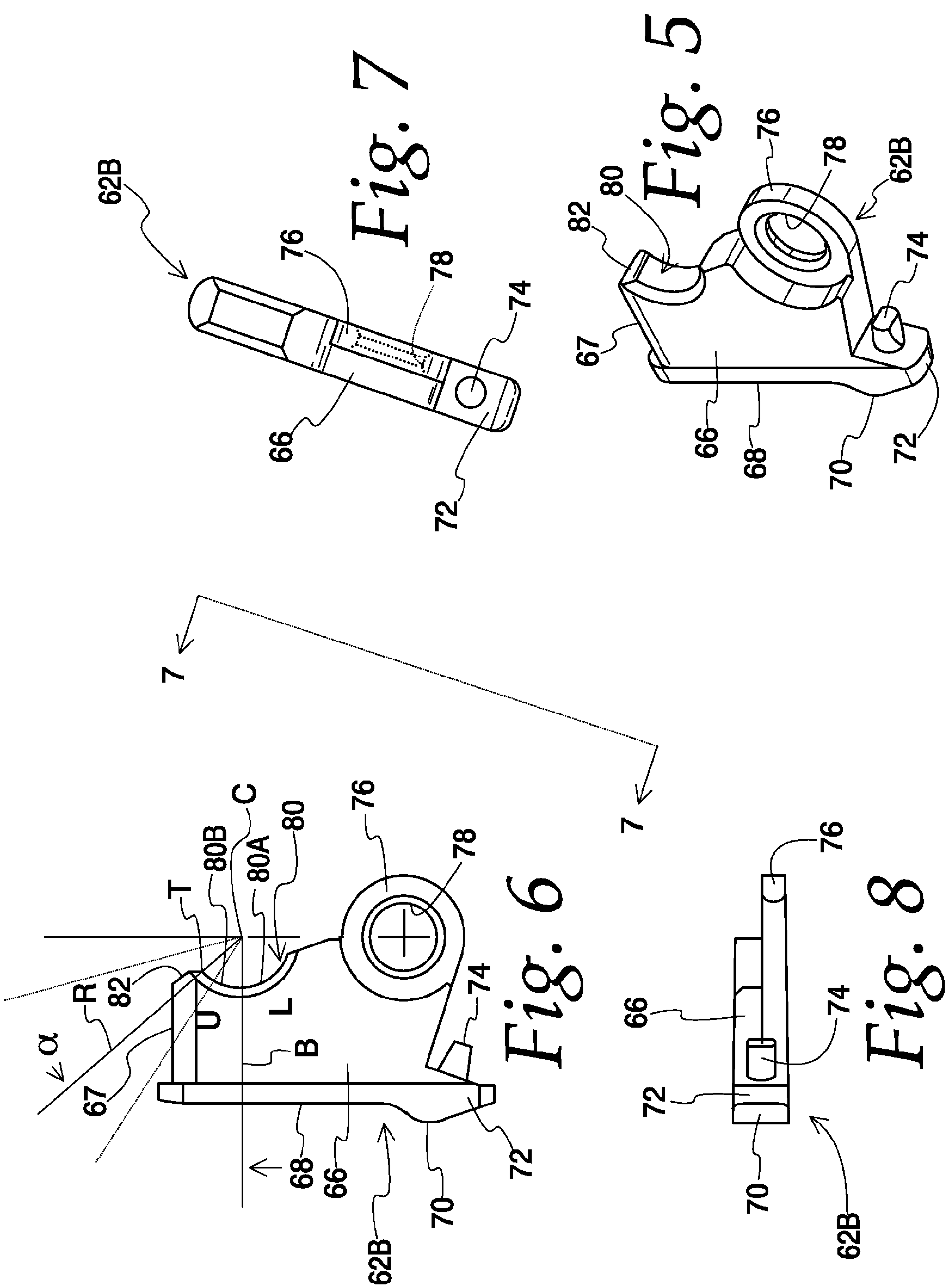


Fig. 7

Fig. 5

Fig. 6

Fig. 8

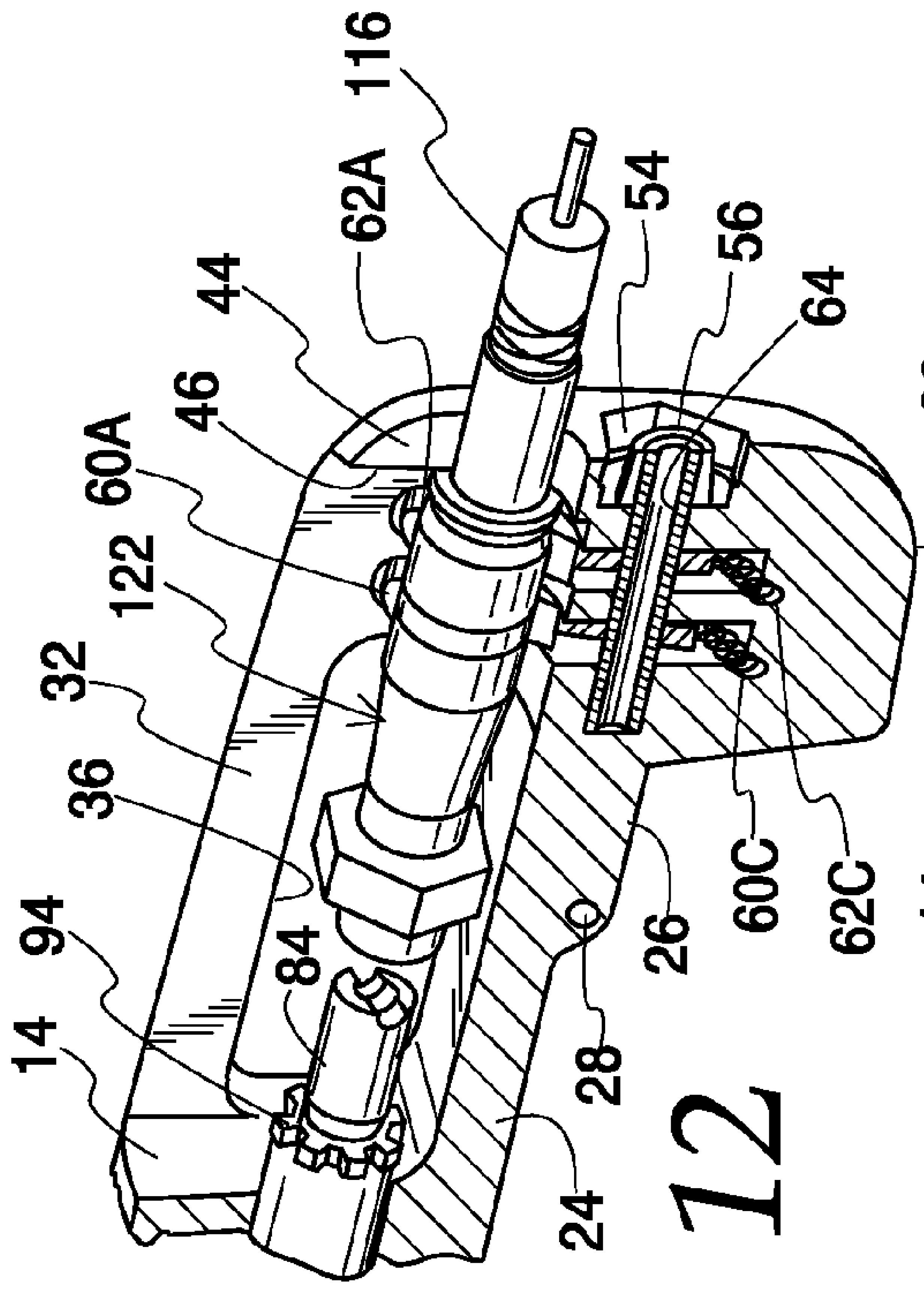


Fig. 12

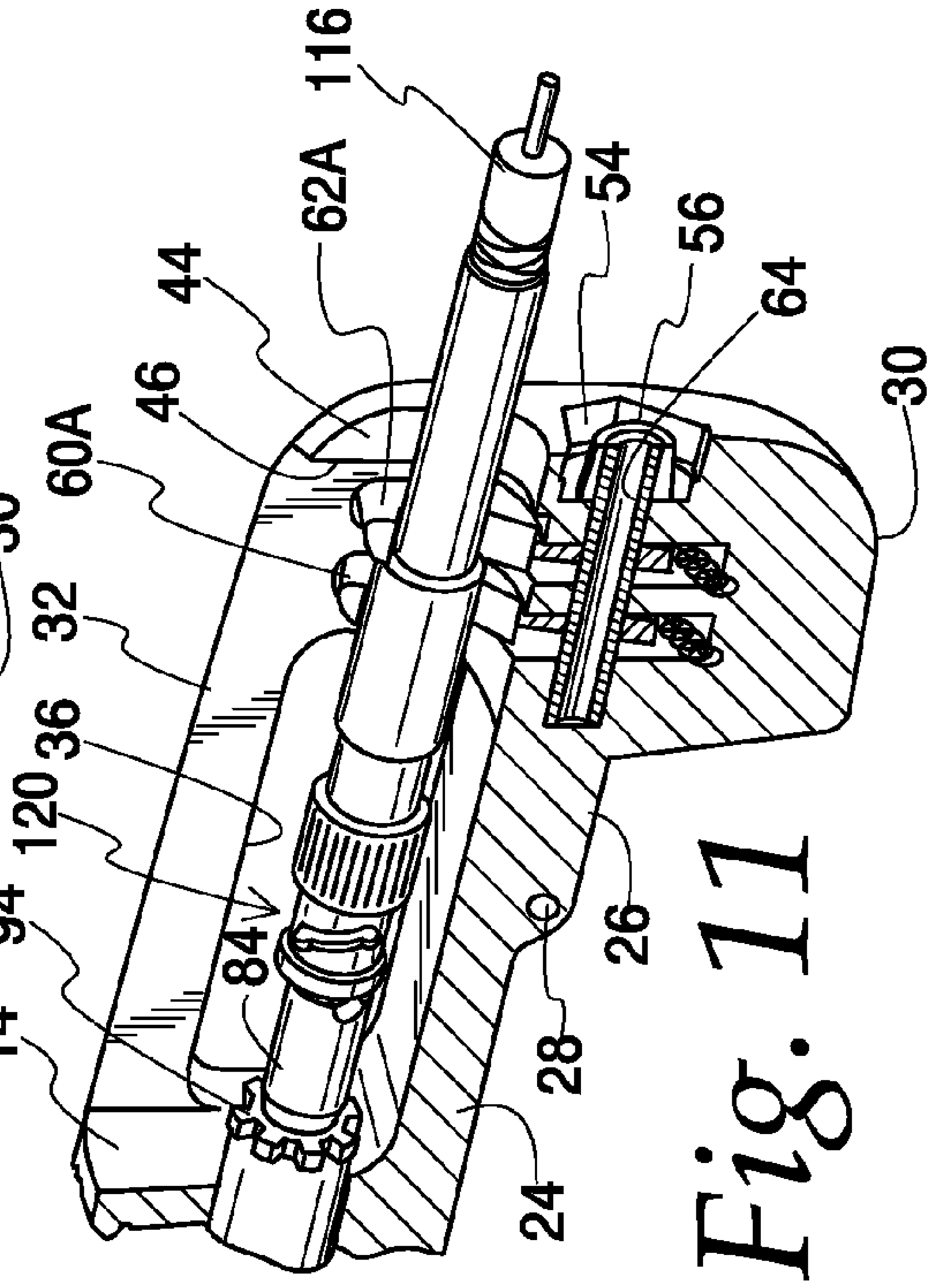


Fig. 11

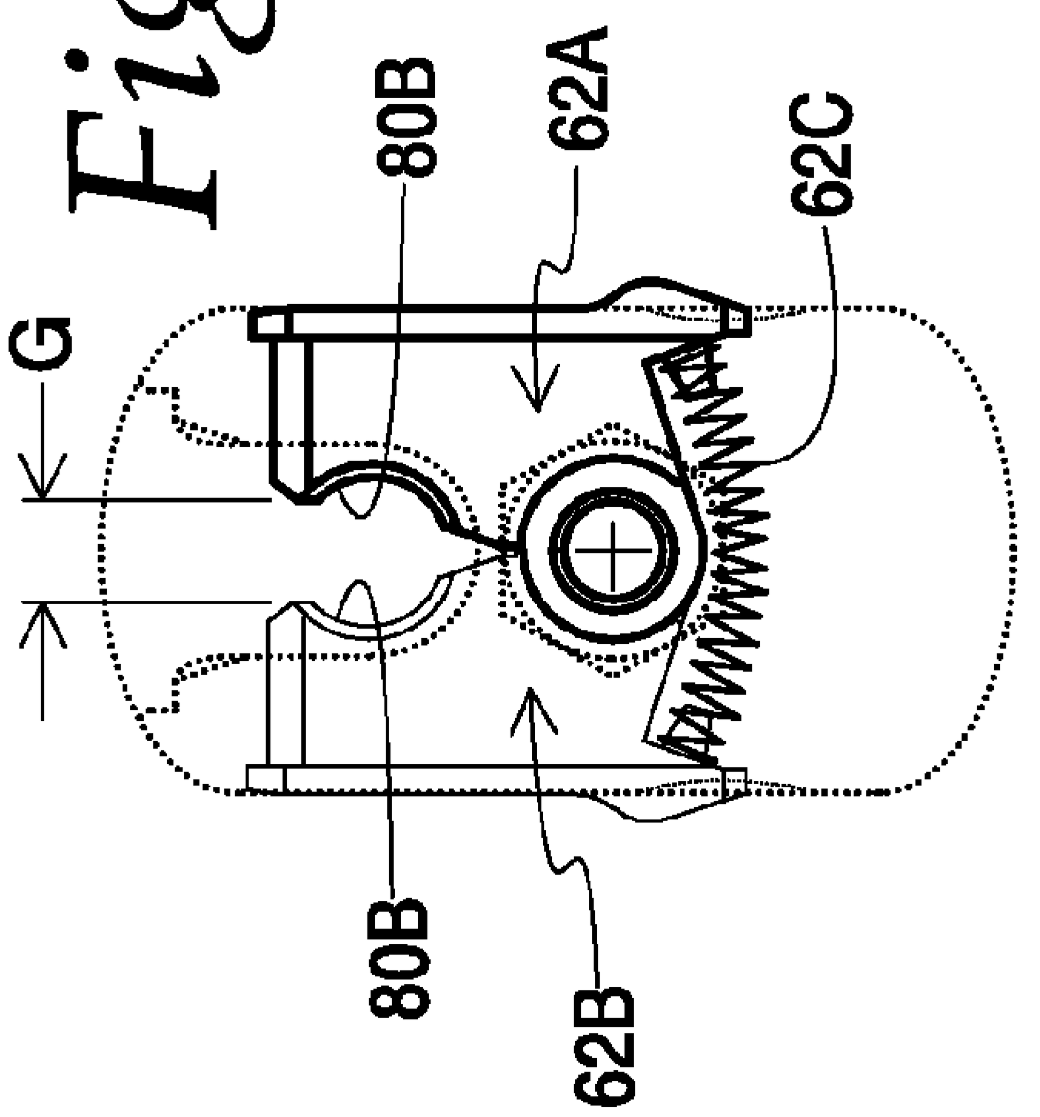


Fig. 9

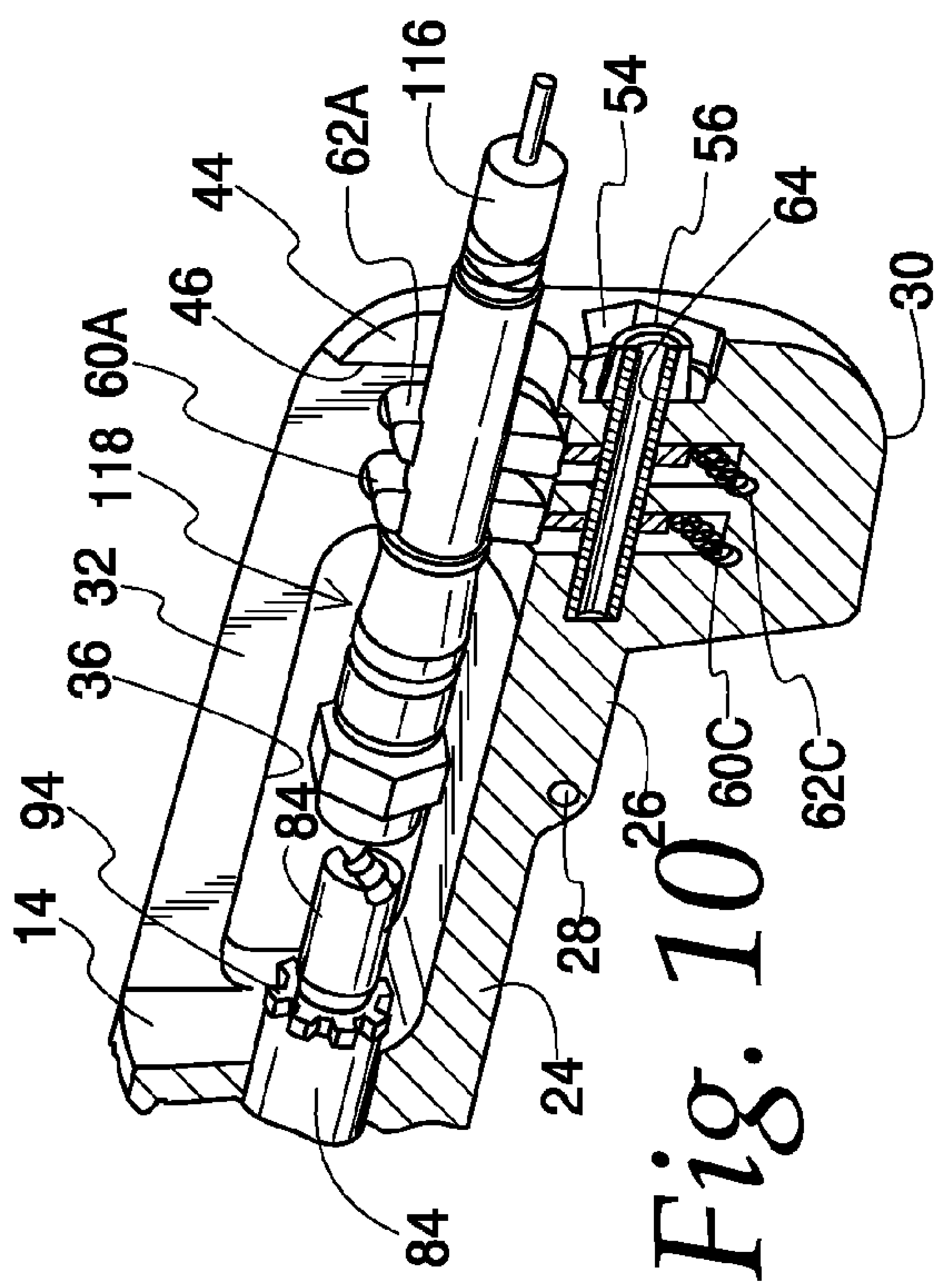
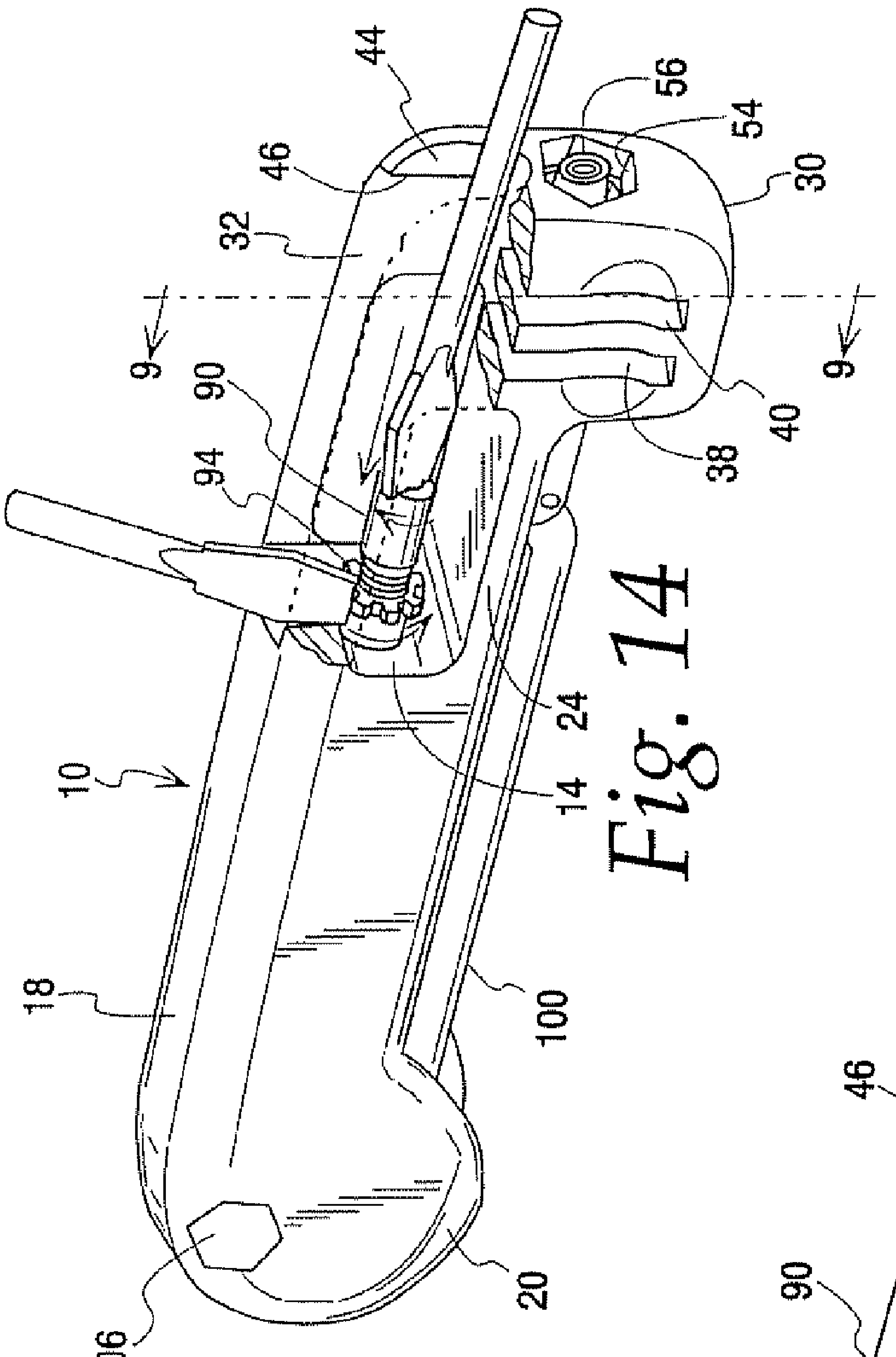


Fig. 10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56
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9
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90
94
40
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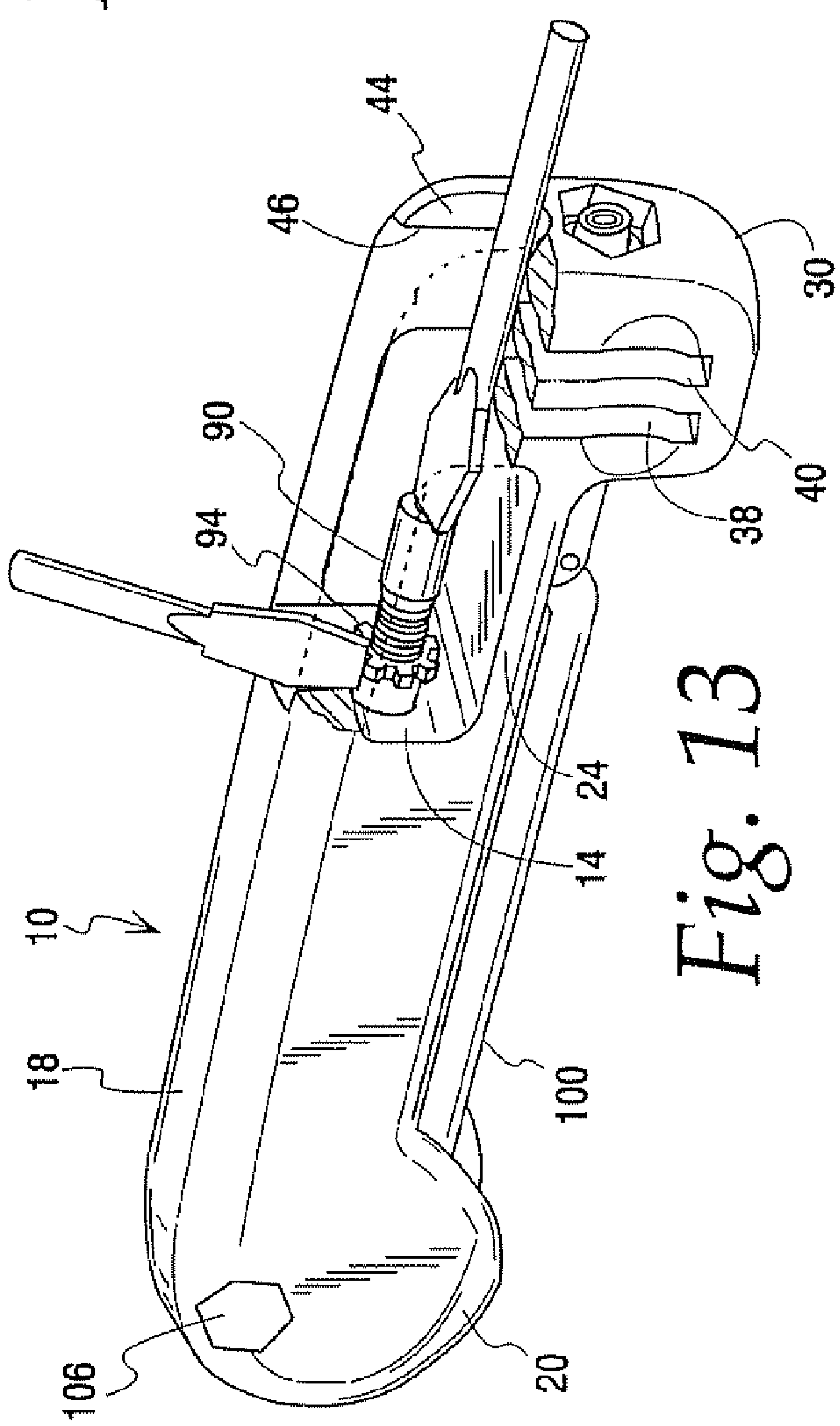
10
18
100
106
20

Fig. 14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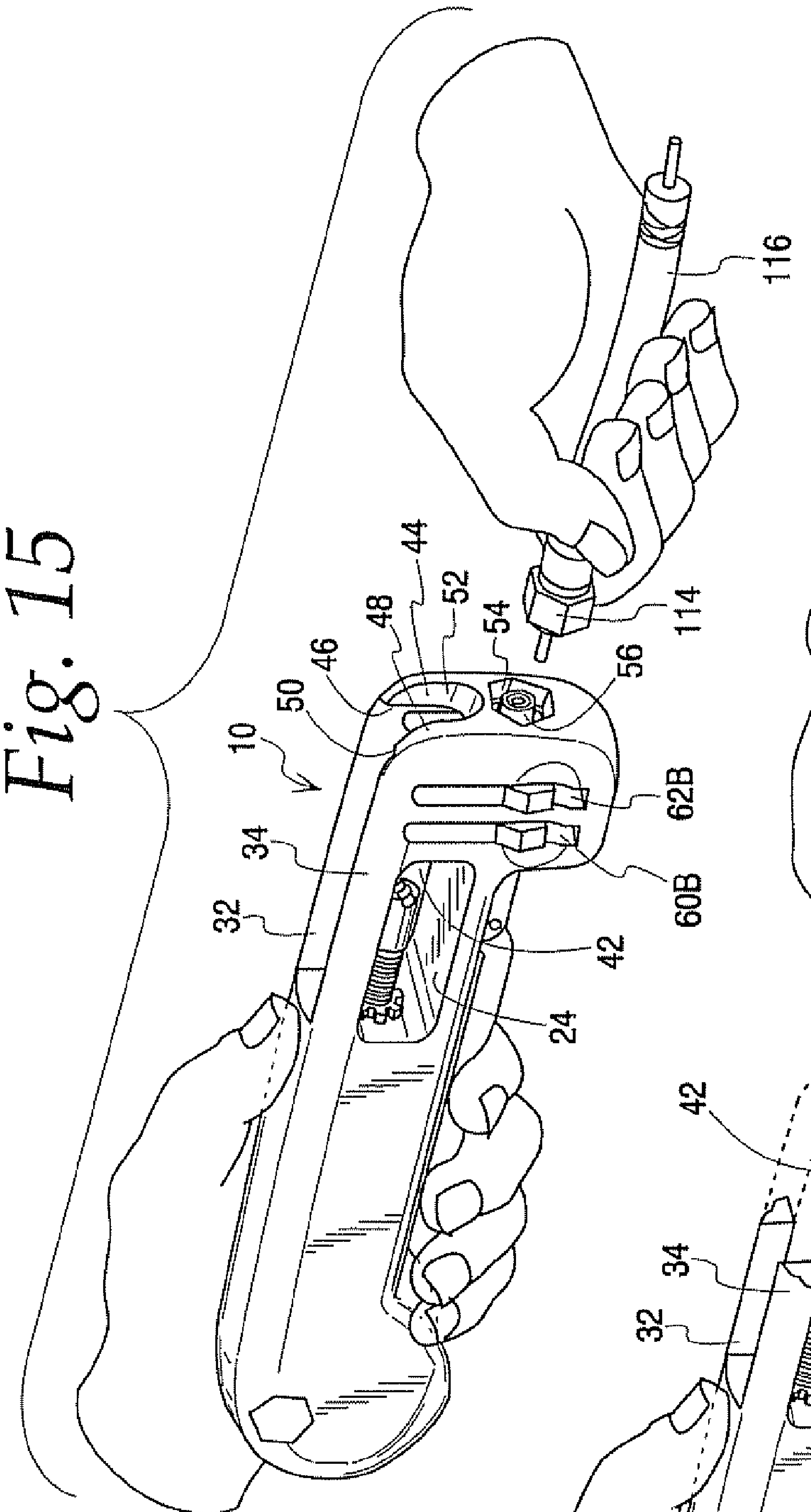
94
38
40
24
14
10
18
100
106
20

Fig. 13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48
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56
114
116
10
34
32
62B
60B
42
24

Fig. 15

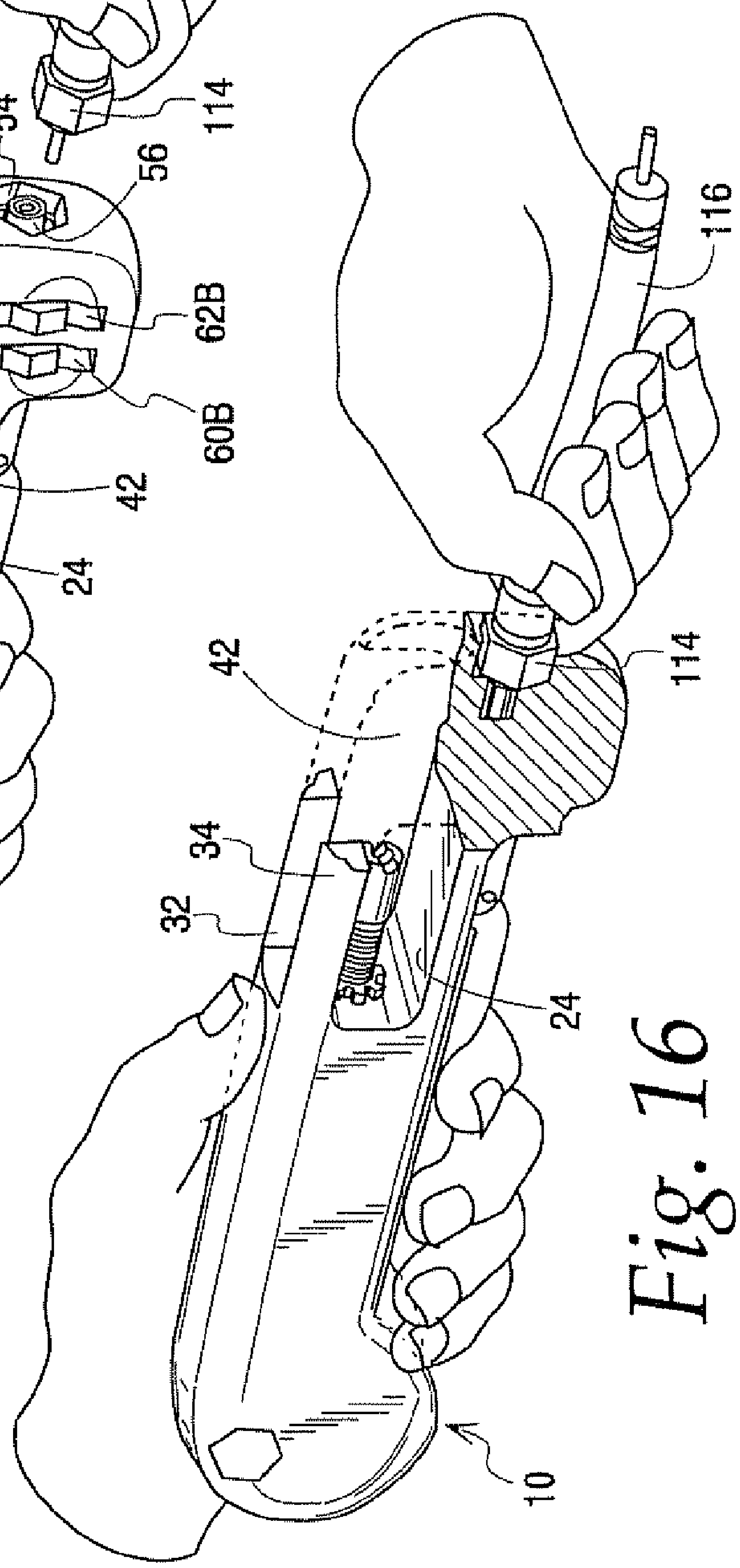
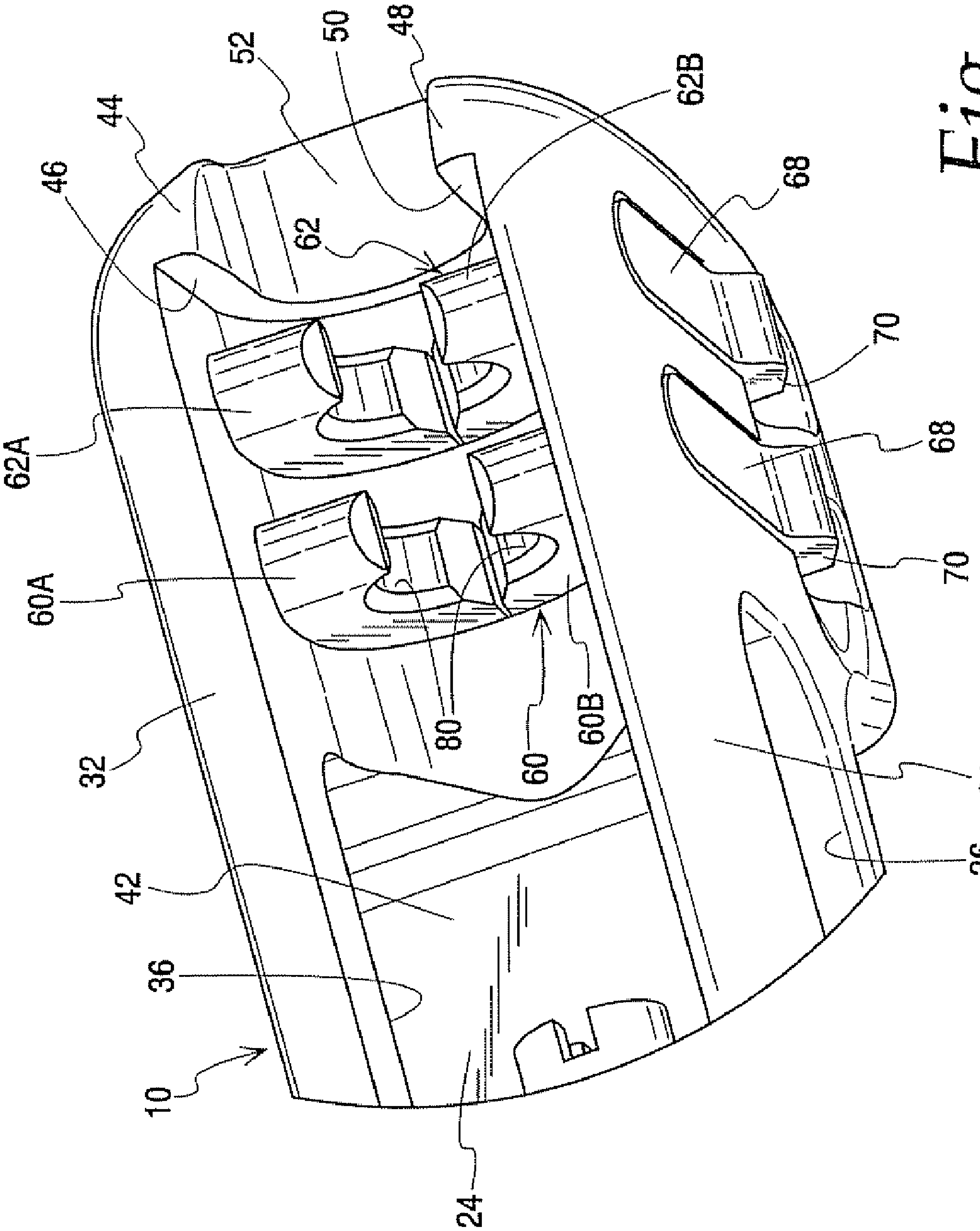

116
114
42
34
32
24
10

Fig. 16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48
44
46
62
62B
68
70
68
70
62A
60A
80
60
60B
34
36
32
42
36
10
24

Fig. 17

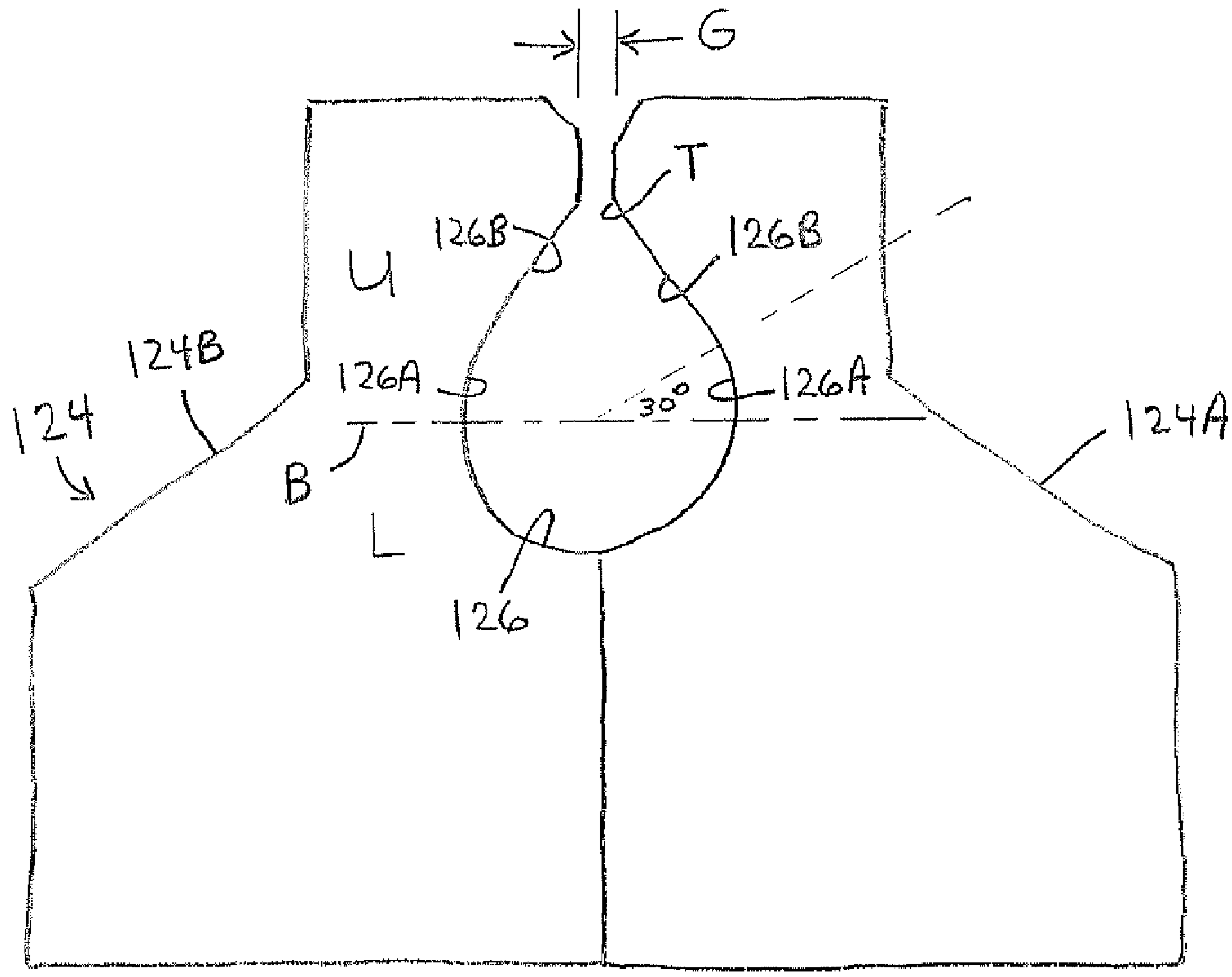
G
T
126B
126B
U
124B
126A
126A
30°
124
124A
B
L
126

Fig. 18

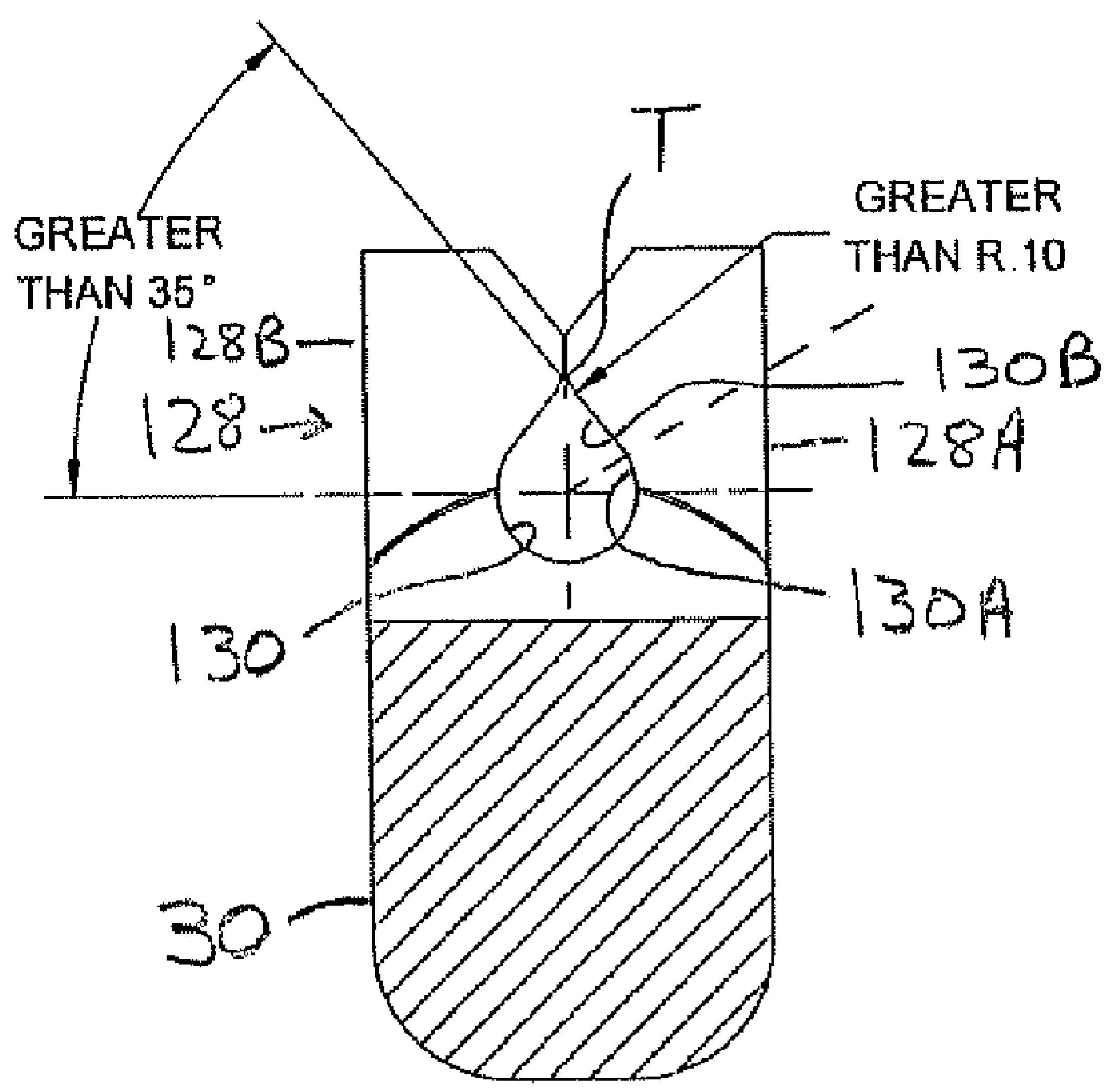
T
GREATER THAN 35°
GREATER THAN R.10
128B
130B
128
128A
130
130A
30

Fig. 19

APPLICATION TOOL FOR COAXIAL CABLE COMPRESSION CONNECTORS

BACKGROUND OF THE INVENTION

This invention relates to a tool for installing compression connectors on the end of coaxial cable. Such connectors come in a variety of styles and sizes. Among the styles are F-type, BNC and RCA connectors. Among the sizes are RG-6, RG-11 and RG-59. Details of the three connector styles are shown in U.S. Pat. No. 7,153,159. Installation of each style of compression connector entails inserting the prepared end of a coaxial cable a predetermined distance into the connector and then compressing the connector to deform a portion of it and lock it onto the cable. Compression tools for performing this function are known. Such tools have a zone which receives a connector pressed onto the end of a coaxial cable. A compressive force then is applied to the ends of the connector to deform the connector and complete the installation.

One disadvantage of early compression tools is the compression chamber is sized to accept only a single size or type of connector. Several such tools were required in a technician's toolbox to accommodate all the sizes that might be needed. Some prior art tools addressed this problem by providing multiple, separate inserts or plungers to accommodate different connector sizes. However, this requires the technician to change out the tool parts every time a different size connector is encountered. Time is lost performing the change. Furthermore, this type of multiple component tool still does not remove the need to have separate tools or components for separate sizes of connectors.

A prior art tool that does accommodate two different connector sizes in a single tool with no removable parts is shown in U.S. Pat. No. 6,820,326. This tool has two pairs of split bases at separate longitudinal locations in the compression chamber. While this allows the tool to be used on two different connector sizes, it introduces problems of its own. Chief among these is the inability to release a finished cable/connector combination without separate manipulation of the split bases. A user typically holds the compression tool in the palm of one hand and the cable/connector in the other hand. The cable/connector is inserted into the compression chamber where the split bases engage the cable and provide the abutment for the back end of the connector. Then the tool handle is squeezed to perform the compression. Now the finished cable is ready for release from the tool but the split bases will not readily release it. Instead the user has to perform an awkward maneuver in which he or she balances the tool in the palm and outer fingers so the thumb and forefinger are available to actuate the split bases to the open position. Alternately, the user might try a similar maneuver with the opposite hand, that is, grasping the cable with a couple fingers while opening the split bases with two other fingers and then pulling one hand away to remove the cable from the tool. Neither of these methods of releasing a finished cable from the tool is convenient. It has also been found that this tool does not work well with RG-11 F-type compression connector.

SUMMARY OF THE INVENTION

The present invention provides a tool for installing compression connectors of various sizes and types on the end of a coaxial cable without the need for multiple tools or components. The tool of the present invention has a pair of movable anvils for engaging two different lengths of connectors and a fixed anvil for engaging a third length of connector. The movable anvils have an aperture which defines a throat that is large enough to permit easy entry and exit of a cable and small enough to apply a suitable retention force so that a cable will not inadvertently come out of or move around in the aperture prior to compression. The anvils each have a pair of movable spring clips with a depression or cutout in an edge thereof such that opposed spring clips define the cable-receiving receptacle. A connector seated at the proper location on the end of the cable is placed between the plunger and face of the anvil with the cable extending through the aperture in the anvil. Then the plunger is actuated to compress the connector and fix it in place on the cable. After retraction of the plunger a radial movement of the finished cable/connector combination is all that is needed to remove the finished cable from the compression zone. The arrangement of the anvil apertures is such that separate releasing activation of the spring clips is not necessary. In an alternate embodiment, the anvil may have a tear-drop shaped aperture, either with or without a throat.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevation view of the application tool of the present invention with the handle shown in an actuated position.

FIG. **2** is an exploded perspective view of the application tool.

FIG. **3** is a perspective view of a longitudinal section through the tool, with the plunger shown in a retracted position.

FIG. **4** is a perspective view of a longitudinal section through the tool, with the plunger shown in an actuated position.

FIG. **5** is a perspective view of a spring clip.

FIG. **6** is a front elevation view of the spring clip of FIG. **5**.

FIG. **7** is a side elevation view of the spring clip, looking in the direction of line **7-7** of FIG. **6**.

FIG. **8** is a bottom plan view of the spring clip.

FIG. **9** is a front elevation view of an anvil looking along line **9-9** of FIG. **14**, with the outline of the tool base shown in phantom.

FIG. **10** is a perspective view of a longitudinal section through the compression zone, showing an F-type connector loaded in engagement with the first anvil.

FIG. **11** is a perspective view of a longitudinal section through the compression zone, showing an BNC-type connector loaded in engagement with the second anvil.

FIG. **12** is a perspective view of a longitudinal section through the compression zone, showing an RG-11 F-connector loaded in engagement with the fixed anvil.

FIGS. **13** and **14** are perspective views of the application tool with portions broken away to illustrate adjustment of the lock nut and plunger.

FIGS. **15** and **16** are perspective views of the application tool, with portions broken away in FIG. **16**, illustrating the connector seating holder and its use.

FIG. **17** is a perspective view of the application tool looking toward the forward end of the compression zone.

FIG. **18** is a view similar to FIG. **9**, showing an alternate embodiment of the anvil.

FIG. **19** is a view similar to FIG. **9**, showing a further alternate embodiment of the anvil.

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** illustrates the application tool of the present invention generally at **10**. The tool includes a base **12**. The details of the base are best seen in FIGS. **2** and **3**. The base includes a central block member **14** having a bore **16** formed therein. A generally three-sided heel section **18** extends rearwardly from the block member. The heel section is hollow and open at its lower side. Rounded ears **20** are formed at the rear of the heel **18**. There are transverse, aligned holes **22** in the heel above the ears **20**. Extending forwardly of the block member **14** is a beam **24**. About midway along the beam there is an enlargement **26** which includes a transverse hole **28**. Forwardly of the enlargement **26** the front portion of the beam **24** carries a depending anvil mount **30**. Above the anvil mount there are two side walls **32**, **34** joined to the beam **24**. The side walls extend back to the block member **14**. There are windows **36** in the side walls. Two transverse slots **38**, **40** are formed in the anvil mount **30**. These slots extend up into the side walls **32**, **34** as best seen in FIG. **2**. Together the front surface of the block member **14**, the top surface of the beam **24** and the inside surfaces of the side walls **32**, **34** define a compression zone **42** having a longitudinal axis A. At its forward end the side wall **32** joins an abutment **44** which has a rearwardly-facing, fixed bearing surface **46**. Fixed bearing surface **46** extends transversely of the axis A. Similarly, side wall **34** terminates at an abutment **48** which includes a fixed bearing surface **50**. See FIGS. **15** and **17** also. The bearing surfaces **46**, **50** are coplanar. It will be noted that the forward ends of the abutments **44**, **48** have a curved lower portion which, taken together, define U-shaped opening **52** into the compression zone.

The front or nose of the anvil mount **30** has a connector seating holder **54**. In this embodiment the holder **54** is a hexagonal depression in the anvil mount with a central post **56** disposed in the depression. The post **56** surrounds a bore **58** (FIG. **4**) that extends longitudinally into the anvil mount **30**. The depression is sized to receive the front end of a compression connector therein. The holder **54** retains the connector while a prepared cable is seated on the back end of the connector prior to compression. Further details of this process will be described below.

Attention will now be turned to the components attached to the base **12**. First and second anvils **60** and **62** are retractably insertable into the compression zone **42** between open and closed positions. A complete anvil comprises two spring clips and a clip spring. Thus, first anvil **60** has a left spring clip **60**A, a right spring clip **60**B and a clip spring **60**C. Similarly, anvil **62** has a left spring clip **62**A, a right spring clip **62**B and a clip spring **62**C. The spring clips of the first anvil **60** are mounted in the transverse slot **38** of the anvil mount **30**, as seen in FIGS. **3** and **4**. The spring clips of the second anvil **62** are similarly mounted in the transverse slot **40**. All of the spring clips are pivotally mounted on a spring pin **64** which is set in the bore **58** of the anvil mount **30**.

Details of a spring clip **62**B are shown in FIGS. **5-8**. In this embodiment all of the four spring clips used in the two anvils are identical so all the others would look the same as **62**B shown, except the installed left spring clips would be flipped wound from the orientation shown in FIG. **5**. The spring clip has a plate **66**. The rear surface of the plate defines a bearing surface. The plate is bounded on top by a head **67** and on one side by a generally vertical edge **68**. Near the bottom of the vertical edge is a knuckle **70** extending therefrom. At the lower portion of the plate a foot **72** carries a peg **74**. On the side edge of the plate opposite the knuckle **70** there is a circular ring **76**. An opening **78** extends through the ring. The opening receives the spring pin **64** when the clips are mounted in the anvil mount **30** so the clips are reciprocally movable into and out of the compression zone **42**. The ends of the clip springs **60**C or **62**C seat on the pegs **74** and normally bias the upper portions of the spring clip toward one another, i.e., into the compression zone **42**. It will be noted that the ring has half the thickness of the remainder of the plate, as seen in FIGS. **5**, **7** and **8**. Thus when two spring clips are placed with their rings adjacent one another and the axes of the openings **78** aligned, the faces of the spring clips will be coplanar. This allows the spring clips to fit fairly snugly in the transverse slots, with sufficient clearance for easy movement but without allowing the spring clips to cant in their slots.

Above the ring **76** the edge of the plate has an aperture **80**. The aperture is beveled at the front and rear faces of the plate. In this case the aperture is circular, although its shape could be other than a circle. The center of the aperture circle is at C. The horizontal centerline of the aperture is shown at B. It defines upper and lower quadrants U and L of the aperture **80**. The portion of the plate edge that defines the aperture in the lower quadrant L, i.e., the edge portion below the centerline B can be considered a support surface **80**A. The portion of the plate edge that defines the aperture in the upper quadrant U, i.e., the edge portion above the centerline B defines a retention surface **80**B. The retention surface in this embodiment defines a circular arc. The retention surface terminates in the upper quadrant at terminus T. An angle between the horizontal centerline and a radius R through the terminus T defines what will be referred to herein as a closure angle α. By way of example, and not by limitation, the closure angle in the illustrated embodiment is about 50°. The terminus is joined to the head **67** by an entry surface **82** which is angled from the vertical to assist in guiding a cable into the aperture.

The closure angle α is important because it determines the ability of the spring clips to capture and release a cable inserted into the tool's compression zone. This will become evident by examination of anvil **62** in FIG. **9**. As mentioned above, the complete anvil **62** comprises the left and right spring clips **62**A and **62**B and clip spring **62**C. The apertures **80** of the cooperating spring clips lie side by side to define a cable receiving receptacle. There is a throat or gap G between the terminus points of the two spring clips' apertures. It is important to properly size this throat or gap such that coaxial cables can be readily inserted into and removed from the receptacle but at the same time the clips will impart a retaining force that prevents inadvertent slippage of the cable from the receptacle. In other words, a cable receptacle having a completely open slot at its entry point is undesirable because the cable is then totally free to move out of position for crimping. The spring clips must surround a portion of the upper quadrants of a cable therein to provide a retaining function. But the spring clips can only surround a portion of the cable. If the spring clips fully suffound the cable they prevent ready release of the cable when it is finished, which would then require the awkward manipulation of the clips as described above. Thus, the spring clips must provide some, but not too much, restraint on a cable in the cable receiving receptacle. The compromise struck by the present invention between too little and too much restraint can be defined in two ways. One is by describing the closure angle as being at least 33° and not more than 75° About 50° is preferred. This will extend the clip surface defining the aperture **80** sufficiently into the upper quadrant U to engage enough of an inserted cable to hold it for crimping and release it after crimping. Alternately, since the retention surfaces of the apertures **80** need not be circular, the throat or gap G between the terminus points of the apertures could be about 0.075 inches to about 0.250 inches, with about 0.19 inches being preferred. It has been found that a throat or gap of this amount will provide sufficient holding force on a cable in the receptacle prior to crimping while readily releasing a cable after crimping.

Returning now to FIGS. **1-3**, the remaining parts of the application tool will be described. A cylindrical slide rod **84** is mounted for surround translation in the bore **16** of the block member **14**. The rod has a threaded bore **86** at its forward end and a clevis **88** at its rear end. A push head **90** has a slot **92** at its forward end. Much of the body of the push head has external threads which engage the internal threads of the slide rod **84**. Together the slide rod **84** and push head **90** form a plunger. A lock nut **94** has internal threads and external teeth. The lock nut is threaded on the push head and is engageable with the leading edge of the slide rod to prevent rotation of the push head. FIGS. **13** and **14** illustrate how the overall length of the plunger is adjustably fixed. To change the length of the plunger, a user inserts a screwdriver blade into the compression zone **42** to engage the teeth of the lock nut and loosen it from the slide rod. This then permits a screwdriver engaged with slot **92** in the push head to rotate the push head as needed to lengthen or shorten the plunger. Once the desired length is obtained by turning the push head, the lock nut **94** is tightened against the end face of the slide rod to prevent further rotation of the push head. Thus, the length of the plunger can be easily adjusted using ordinary tools that are always available.

A push rod **96** connects to the clevis **88** of the slide rod **84** by means of a groove pin **98**. The groove pin fits transversely through aligned openings in the clevis and slide rod. A second groove pin **99** joins the other end of the push rod **96** to a handle **100**. The handle has an elongated arm **102** connected at one end to a clevis **104**. Aligned openings in the clevis **104** receive the groove pin **99**. Another set of openings in the clevis receive a handle anchor pin **106**. Anchor pin **106** extends through the holes **22** in the ears **20** to mount the handle for rotation about the pin. An anchor pin screw **107** threads into the end of the pin **106** to fix it in position.

The anchor pin **106** also fits through a torsion spring **108**. One leg of the spring engages the inside of the heel **18** and the other leg engages the arm **102** to bias the arm away from the heel. A U-shaped wire hasp **110** has free ends which slip into either end of the transverse hole **28** in the beam **24**. The hasp pivots between open and closed positions where it either releases the handle or holds it in the closed position of FIG. **1**. A handle grip **112** slides over the arm **102** to provide a comfortable surface for a user to grasp. The hasp **110** is large enough to accommodate the grip **112**.

The use, operation and function of the application are as follows. The user first sets the plunger to the desired length as described above. The hasp **110** is rotated toward the anvil mount **30** to release the handle **100**. The torsion spring biases the handle to an open position as seen in FIG. **3**. This rotates the handle clevis **104** away from the block member **14** and causes retraction of the push rod **96** and slide rod **84**. The tool is now ready for use. The user prepares a coaxial cable by stripping it appropriately and seating the desired connector type on the stripped cable end. The connector seating holder **54** can be used to assist in inserting the cable the requisite distance into the connector. As seen in FIGS. **15** and **16** a user grasps the tool **10** in one hand and puts a connector **114** loosely on the end of a coaxial cable **116**. The free end of the connector is then inserted into the depression of the seating holder **54**. The user can then press the tool and cable together to push the connector the required distance onto the cable. As this is done there is no possibility of the user being injured by a sudden thrusting of the central conductor of the cable through the front end of the connector.

Once the connector is properly seated on the cable, the connector/cable combination is placed into the compression zone **42** by a radial movement between the side walls **32**, **34**. The cable engages the entry surfaces of the spring clips and forces them apart sufficiently to permit the cable to fit into the cable receiving receptacle defined by the apertures **80** of the spring clips. Once the cable enters the receptacle the clip springs **60**C and **62**C will push the spring clips back to a closed position about the cable wherein the upper quadrant of the spring clip will engage the cable. The cable will extend out the front of the tool through the U-shaped opening **52**. The rear edge of the connector engages the bearing surfaces of one of the movable anvils or the abutments, depending on the size of the connector. FIG. **10** illustrates that a typical F-type connector **118** will engage the first anvil **60**. FIG. **11** shows a BNC connector **120** in engagement with the second anvil **62**. FIG. **12** illustrates that an RG-11 F-connector **122** is so large that its rear edge will extend all the way to the fixed bearing surfaces **46**, **50** of the abutments **44**, **48**.

With the rear edge of the connector in engagement with the appropriate bearing surface the user squeezes the handle **100** toward the base **12**. The push rod **96** then pushes the plunger forwardly. The push head **90** engages the front end of the connector. Continued movement of the slide rod and push head combination compresses the connector between the push head and the bearing surfaces, thereby compressing the connector and locking it onto the cable. The user then releases the handle **100**. The torsion spring **108** moves the handle to the open position, which causes the plunger to retract and disengage the connector. With the other hand, the user can then translate the finished cable out of the compression zone by a radial movement out the top of the compression zone. There is no need to manually engage the spring clips because their shape allows the user to simply lift the cable out of the compression zone. The spring clips will release the cable without undue effort on the part of the user. The tool is then ready for the next application. When the user is finished, the handle can be closed and the hasp rotated to retain the handle in the closed position.

FIG. **18** illustrates an alternate embodiment of an anvil **124**. This anvil has left and right spring clips **124**A, **124**B. These may be generally similar to the spring clips described above except for the shape of the aperture **126**. Aperture **126** has a tear-drop shape. That is, the lower quadrants of the aperture are circular but the retention surfaces in the upper quadrants have both a circular portion **126**A and a tangential portion **126**B. The circular portion **126**A defines an arc above the horizontal centerline B of about 30°. The retention surface then merges into the tangential portion **126**B, which is generally straight. The tangential portion ends at terminus T. There is a gap or throat G between the termini of the two spring clips.

FIG. **19** illustrates a further alternate embodiment of an anvil **128**. As is the case with all the anvils, anvil **128** has left and right spring clips **128**A, **128**B which are similar to those described above except for the shape of the aperture **130**. Aperture **130** has a tear-drop shape similar to the aperture **126** but in this case there is no gap or throat between the clips. Thus, the lower quadrants of the aperture are circular but the retention surfaces in the upper quadrants have both a circular portion **130**A and a tangential portion **130**B. The circular portion **130**A defines a circular arc above the horizontal centerline of about 30°. The aperture then merges into the tangential portion **130**B. As shown in the figure, the tangential portion **130**B defines an angle of greater than 35° with the horizontal centerline B. The tangential portion may have a small arc at its upper end just prior to terminus T. The termini are in contact with each other when the spring clips are closed. There is no gap or throat between the termini of the two spring clips.

In both of the tear-drop configurations of FIGS. **18** and **19**, the retention surface defined by the arcuate portion and the tangential portion provides the desired balance between retention ability before and during compression and ease of release after compression. It will be understood that the retention surface could have shapes other than the tear-drop configuration shown. For example, instead of having an arcuate portion, the retention surface could just have a straight tangential portion starting at the horizontal centerline. In such a configuration the tangential portion would not be tangential to the support surface in a strict geometric sense, but it will be understood that the term "tangential" as used herein is broad enough to cover alternative arrangements of the retention surface that do not meet strict geometric conditions. What is important is that the retention surface in these alternate embodiments have a portion that leads or slopes into the parting line between the spring clips. As a result of the leading configuration of the retention surface, outward radial movement of the cable will produce a lateral force on the spring clips that tends to separate the spring clips and allow release of the cable. The precise combination of arcuate, straight, curved or angular surfaces that comprise the retention surface may vary so long as the combination produces a lateral, separating force on the spring clips when a cable is moved radially outwardly of the compression zone.

While the preferred form of the invention has been shown and described herein, it should be realized that there may be many modifications, substitutions and alterations thereto without departing from the scope of the following claims.

We claim:

1. A tool for installing compression-type coaxial cable connectors, comprising:

a base including a block member, a beam extending from the block member, and first and second laterally-spaced side walls extending from the beam;

the block member, beam and side walls defining a compression zone for removably receiving therein an end portion of a coaxial cable and a compression connector therefor;

a plunger retractably insertable along a longitudinal axis from the block member into the compression zone for engagement with the free end of a compression connector;

at least one anvil retractably insertable into the compression zone between open and closed positions, the anvil having an aperture for removably receiving therein a coaxial cable and a bearing surface for abutting a portion of the back end of a compression connector of a first size when the anvil is in the closed position;

a pair of laterally-aligned fixed bearing surfaces, one fixed bearing surface formed on each of the side walls at a location longitudinally spaced from the anvil, the fixed bearing surfaces extending laterally inwardly toward the longitudinal axis sufficiently to abut a portion of the back end of a compression connector of a second size while still being spaced sufficiently to permit a coaxial cable to fit therebetween; and

wherein the at least one anvil is configured to allow a cable and connector of either the first or second size to be inserted into the compression zone.

2. The tool of claim **1** further comprising a second anvil retractably insertable into the compression zone between open and closed positions, the second anvil having an aperture for removably receiving therein a coaxial cable and a bearing surface for abutting a portion of the back end of a compression connector when the second anvil is in the closed position, said at least one anvil, the second anvil and the fixed bearing surfaces all being located at different longitudinal positions to abut differently-sized compression connectors.

3. The tool of claim **2** wherein the fixed bearing surfaces are located farther from the plunger than the anvils.

4. The tool of claim **1** wherein the at least one anvil includes left and right lower quadrants and left and right upper quadrants which together define the aperture; at least one of the upper quadrants have a retention surface extending from a horizontal centerline of the aperture toward a vertical centerline of the aperture to define a closure angle of between about 33° and about 75°.

5. The tool of claim **1** wherein the at least one anvil includes left and right lower quadrants and left and right upper quadrants which together define the aperture; the upper quadrants are separated by a gap of about 0.075 inches to about 0.250 inches.

6. The tool of claim **1** wherein the at least one anvil includes left and right lower quadrants and left and right upper quadrants which together define the aperture; at least one of the upper quadrants have a retention surface extending from a horizontal centerline of the aperture toward a vertical centerline of the aperture, the retention surface being arranged to produce lateral separating forces on the anvil when a cable is moved radially outwardly of the aperture.

7. The tool of claim **1** further comprising a connector seating holder formed in the base and sized to releasably receive a free end of a connector.

8. The tool of claim **1** wherein the spring clips are pivotably mounted in laterally-aligned slots formed in the side walls.

9. The tool of claim **1** wherein the at least one anvil is configured to move automatically when a cable and connector are moved into or moved out of the compression zone.

10. The tool of claim **1** wherein the at least one anvil further includes left and right spring clips.

11. The tool of claim **10** wherein the spring clips are biased toward a closed position.

12. The tool of claim **10** wherein the left and right spring clips of the at least one anvil are spaced apart and define a gap therebetween in the closed position wherein the gap is configured to cause the left and right spring clips of the at least one anvil to automatically move further apart when a cable and connector are moved into or moved out of the compression zone.

13. The tool of claim **10** wherein the left and right spring clips of the at least one anvil further comprise entry surfaces configured to automatically force the spring clips to move toward an open position when a cable and connector are moved into the compression zone, and the spring clips further comprise exit surfaces configured to automatically force the spring clips to move toward an open position when a cable and connector are moved out of the compression zone.

14. The tool of claim **1** wherein the plunger further comprises a push head threadably connected to a slide rod.

15. The tool of claim **14** further comprising a lock nut threadably connected to the push head and engageable with an end of the slide rod to fix the relative positions of the slide rod and push head.

16. The tool of claim **14** wherein an end of the push head has a slot formed therein.

17. A tool for installing compression-type coaxial cable connectors, comprising:

a base including a block member, a beam extending from the block member, and first and second laterally-spaced side walls extending from the beam;

the block member, beam and side walls defining a compression zone for removably receiving therein an end portion of a coaxial cable and a compression connector therefor;

a plunger retractably insertable along a longitudinal axis from the block member into the compression zone for engagement with the free end of a compression connector;

a first anvil retractably insertable into the compression zone between open and closed positions, the first anvil having an aperture for removably receiving therein a coaxial cable and a bearing surface for abutting a portion of the back end of a compression connector when the first anvil is in the closed position;

a second anvil retractably insertable into the compression zone between open and closed positions, the second anvil having an aperture for removably receiving therein a coaxial cable and a bearing surface for abutting a portion of the back end of a compression connector when the second anvil is in the closed position:

the anvils comprise left and right spring clips;

a pair of laterally-aligned fixed bearing surfaces, one fixed bearing surface formed on each of the side walls at a location longitudinally spaced from the anvil, the fixed bearing surfaces extending laterally inwardly toward the longitudinal axis sufficiently to abut a portion of the back end of a compression connector while still being spaced sufficiently to permit a coaxial cable to fit therebetween; and

the first anvil, the second anvil and the fixed bearing surfaces all being located at different longitudinal positions to abut differently-sized compression connectors.

18. The tool of claim **17** wherein the spring clips of each of the respective anvils

are pivotably mounted in laterally-aligned slots formed in the side walls.

19. The tool of claim **18** wherein the spring clips are biased toward a closed position.

20. The tool of claim **17** wherein the at least one anvil is configured to move automatically when a cable and connector are moved into or moved out of the compression zone.

21. The tool of claim **17** wherein the left and right spring clips of the first anvil are spaced apart and define a gap therebetween in the closed position wherein the gap is configured to cause the left and right spring clips of the first anvil to automatically move further apart when a cable and connector are moved into or moved out of the compression zone.

22. The tool of claim **17** wherein the left and right spring clips of the first anvil further comprise entry surfaces configured to automatically force the spring clips to move toward an open position when a cable and connector are moved into the compression zone, and the spring clips further comprise exit surfaces configured to automatically force the spring clips to move toward an open position when a cable and connector are moved out of the compression zone.

23. The tool of claim **17** wherein the plunger further comprises a push head threadably connected to a slide rod.

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